

REMARKS

This application has been carefully reviewed in light of the Office Action dated March 18, 2005. Claims 1 to 3, 5 to 7, 9 to 15 and 17 to 26 are in the application, of which Claims 1, 7, 13, 19, 25 and 26 are independent. Claims 1, 3, 5, 7, 13, 15, 18, 19, 25 and 26 have been amended. Reconsideration and allowance are respectfully requested.

In an Office Action dated March 23, 2005, claims 1 to 3, 5 to 7, 9 to 15, 17 to 19, and 21 to 26 were rejected under 35 U.S.C. § 103(a) over U.S. Patent 6,505,205 (Kothuri). These rejections are respectfully traversed.

One aspect of the invention as defined in Claim 1 relates to the creation of a split tree from an input tree that describes a document. The input tree comprises a plurality of parent nodes and child nodes, with each parent node defining operations to be performed to child nodes of that parent. A determination is made as to which of the plurality of nodes fit into a target area within the document. Nodes that fit into the target area are marked with a mark specific to the target area so as to create a split tree in which nodes belonging to each tree fragment are identified by a common mark. Thus, the split tree represents the input tree and at least one tree fragment obtained by splitting the input tree. Claims 13 and 25 relate to an apparatus and computer program product, respectively, that correspond generally to claim 1.

Another aspect of the Applicant's invention, as defined in claim 7, relates to a method of forming at least one tree fragment from a split tree. Nodes of the split tree are marked with marks to identify nodes belonging to tree fragments obtained by splitting an input tree. The input tree describes a document and comprises a plurality of parent nodes and child nodes, with each parent node defining operations to be performed to child nodes of that parent node. The method starts by identifying the nodes of the split tree marked with respective marks. Each

respective mark is associated with a respective tree fragment. The method then creates respective tree fragments from the nodes marked with the respective marks. Claims 19 and 26 relate to an apparatus and computer program product, respectively, that correspond generally to claim 7.

Kothuri relates to a method for indexing and storing a set of multidimensional and multi-attribute data in a relational or object relational database management system. An R-tree is used to index the data. The data is indexed by recursively dividing the data items until each subdivision can be stored into a single leaf node of a tree structured index. Each node has a specified fanout. For leaf nodes, the fanout specifies the number of data items that may be stored in the leaf node. For other nodes, including root nodes, the fanout specifies the number of child nodes such a node may have.

The steps of the method are described in detail with reference to Fig. 5. As can be seen from the example R-tree 400 (Fig. 4) created from the example dataset 300 (Fig. 3), the method received as input a set of multi-dimensional data and operates to create an R-tree for indexing multi-dimensional data. As in plain from this example and from the remainder of the reference, there are no input trees in Kothuri. Kothuri creates a tree structure from a set of data, and does not operate on an input tree. It does not teach receiving any tree structure as input, and certainly does not teach receiving a tree structure that describes a document, where each parent node defines operations to be performed to child nodes of that parent node. For this reason alone, Kothuri cannot render claim 1, 7, 13, 19, 15 or 26 obvious.

Furthermore, there is nothing in Kothuri to teach or suggest marking the nodes of the input tree with marks specific to each output area so that the input tree, while maintaining its original structure, also represents the various tree fragments without actually being split into the

tree fragments. The concept of having to split a tree structure into tree fragments is not even mentioned in Kothuri, and the need to maintain the structure of the input tree is not identified.

In comparing the invention claimed in claim 1, for reasons already presented above, Kothuri does not teach, or even relate to a method of marking an input tree, with the input tree describing a document, and wherein each parent node defines operations to be performed to child nodes of that parent node. Kothuri teaches a tree structure for indexing data. Hence, the only commonality Kothuri has with the claimed invention is that a tree structure is used. What that tree structure is used for, what that tree structure represents and how the tree structure is used are very different.

Kothuri creates a tree from a dataset. In doing so Kothuri determines whether the data items fit into the node capacity, that is whether the number of data items to be fitted into the node does not exceed the specified fanout. With the input tree being defined as describing a document with each parent node defining operations to be performed to child nodes of that parent node, what Kothuri teaches is very different than determining which of the plurality of nodes fit into a target area within a document. Applicant respectfully submits that Kothuri does not even teach a concept similar to a target area of a document. In the present invention as defined in claim 1, the size of each child node contributes to the size of the node under consideration, the operations defined by parent nodes contribute to the size of the node under consideration, and nodes already placed in the target area reduce the available space in that target area. In Kothuri each node has a specified fanout, which is completely independent of the size and number of child nodes.

Applicant respectfully disagrees with the Examiner's comment on page 4 that the mark added to each node is "simply a means for identification which is disclosed by Kothuri".

These marks have a special meaning as the tree including those marks represents the input tree as well as at least one tree fragment obtained by splitting the input tree. The identifiers taught by Kothuri are not comparable with the marks defined in the claimed invention. The identifiers taught by Kothuri provide a means for indexing the association between separate nodes by specifying the parent and child nodes. The marks of the Applicant's invention are much more than a means for identifying a node: they allow the input tree to represent one or more tree fragments while also representing the input tree itself.

Based on the foregoing remarks, independent claims 1, 7, 13 19, 25 and 26 are believed to be allowable over the applied reference.

The remaining claims all depend from one of the independent claims discussed above, and each partakes in the novelty and non-obviousness of its respective base claim. In addition, each recites additional patentable features of the present invention, and individual reconsideration of each is respectfully requested.

CONCLUSION

In view of the foregoing Amendments and Remarks, a Notice of Allowance is earnestly solicited.

Applicant's undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address given below.

Respectfully submitted,



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